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Account of the kitchen fitted up at the Foundling Hospital; under the direction of His Excellency Count Rumford.

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THE size of the kitchen is 21 feet 2 inches, by 17 feet. In the center of the wall opposite the windows, is the roasting machine, which is let into the wall, and is 5 feet deep, by 2 feet wide and 15 inches high. In this the dinner, on the roast meat days, being 112 lb. of beef, for the officers and children, is now dressed (the time required being four hours and a half) with a peck of coals and a peck of cinders mixed together; the cinders being saved from the consumption of the former day. Instead of which the average consumption on the roasting days, in the former and common mode of roasting, was above ten times the quantity of coals, being from two and a half to three bushel. Communicating with the roaster there are two pipes; by which the hot air may be forced so as to make the meat more or less brown, at the discretion of the cook. For the convenience of taking out the meat, either to turn it in the course of the dressing, or to take it up when dressed, there is a table on castors, which is easily moved to or from the front of the roaster, and which in height and size corresponds exactly with the bottom of the roaster.

On the right side of the roaster is the steam box, 3 feet 8 inches, by 2 feet, and the large oblong iron boiler, 5 feet by 3 feet 4 inches, divided into two parts; one containing 82 gallons for boiling the childrens meat, the other 41 gallons for boiling greens. The fire place that supplies this boiler and steam box, is sunk into the floor, so as that the upper part of the boiler is not higher than is convenient for the cook to reach over; the space occupied by this boiler, and by the flues belonging to it, including the part on which the steam box stands, is 8 feet 2 inches, by 5 feet 2 inches. This double boiler, and the steam box, in which the potatoes of the Hospital are dressed, and which is capable of boiling 200 lb. weight of potatoes at once, are supplied by the heat of one small fire; the consumption of which, for dressing all this beef, greens and potatoes is, at present, exactly one peck of coals, and the same quantity of cinders. The steam is conducted by a small pipe into the bottom of the steam box, and by another pipe at the top of the steam box into a chimney flue in the wall. In order to prevent the evaporation of steam from either the boiler or the steam box, an object of almost as much saving to food as to fuel, there is to each a double rim, that receives the edge of the cover, and which being kept supplied by a little water, makes it impervious to the steam.

THE steam box is a common deal box, guarded at the corners with iron, and lined with tin; in it there is, at the height of 5 inches above the bottom of the box, a false cullender bottom, which permits the steam to pass equally under every part of the potatoes.

On the left side of the roaster, next the corner, is another oblong double boiler, 3 feet 4 inches, by 2 feet 3 inches, containing in one part 35 gallons, and in the other 17 gallons, for the purpose of dressing a lesser quantity of food, when the larger

larger boiler is not wanted. This has the same double rim as the larger boiler, for preventing the evaporation of steam. The average quantity of coals, that is used for this lesser boiler, for a day's dinner, is rather, but very little, less than what is used for the great boiler. Next to this is a round iron boiler, of 53 gallons, for boiling milk-porridge, and for boiling hot water occasionally; this consumes, on an average, about half the fuel that is used in the larger boiler. The space occupied by these two boilers and their flues, and the shape and height are made to correspond exactly with the other side of the room; so as to have a passage of 6 feet 8 inches clear between them, and to leave in the front of the room, next the windows, an unoccupied space of 13 feet, by 17 feet.

Such is the general account of the work. It remains to add, for the information of those who may incline to benefit by the example, a few observations on the advantage the Foundling Hospital derives from it, the amount of the expence, the uses to which it is generally applicable, and the degree of attention and care required in the management of it.

THE most important benefit to the Hospital, is the saving in point of fuel. How much that may eventually be, cannot yet be precisely stated; at present, the cost of the peck of coals, which is used in boiling the 112 lb. of beef, a proportionable quantity of greens, and 200 lb. weight of potatoes (supposing coals at the high price of 2*l.* 12*s.* a chaldron) is FOUR PENCE; a lesser quantity of coals than is now used, will probably be sufficient; but it will require some time and experience to ascertain the exact amount; and it should be observed that in cold weather, it is very likely that the draught of the fire, and the consumption of the fuel may be increased. For four chaldron consumed in the Foundling kitchen, in the former mode of cooking, there is, as nearly as can be estimated, but one chaldron now used with Count Rumford's apparatus. Besides this, the food being drest more gently, and with less evaporation, there is less waste in that respect; and the food of the Hospital is better drest than heretofore, and (now the cook is used to it) with much less trouble to her, and the other persons employed in the kitchen.

As to the expence, the original cost of the roaster was 16 guineas; to which is to be added, for dripping-pans, gridirons, &c. belonging to it, near 6 guineas more. The cost of the large double boiler was 25*l.* of the steam box 2*l.* 8*s.* and of the lesser double boiler 11*l.* To this, when there is added the amount of about 10*l.* more, for a variety of incidental charges for iron work, in the course of fitting up the kitchen, it will appear that the whole bill for iron work is between 70*l.* and 80*l.* The bricklayer's, carpenter's, and stone mason's bills, amount to near as much more. These however must have been somewhat increased, by the circumstance of this having been the first experiment of the kind, that has been made, on a large scale, in England.

WITH regard to the general use of the invention (I have now no reference to the Count's fire places, the expence of which is trifling, and the advantage equally applicable to the smallest family, and to the humblest cottage) it will appear that the benefit of these kitchens is in proportion to the magnitude of the scale; and that in private families, the advantage will be of less consideration. To say nothing of the application of his principles to the burning of lime, or to engines or manufactories, where fire is the instrument of operation; or of the use to be made of his boilers in husbandry and in breweries; it is worth notice, that so simple an invention as the steam box, for preparing potatoes for cattle may be applied by farmers with hardly any expence or trouble, and with the
greatest

greatest advantage: and in the cookery of all large establishments, where a number of persons is to be supplied from the same kitchen, the benefit is of the utmost importance. In soldiers barracks, public schools, hospitals, manufactories; workhouses, and cooks shops, the saving in fuel, and in the mode of preparing food, and the consequent increase of the comfort and accommodation of the poor are so great, as to make the encouragement and promotion of these valuable Inventions of Count Rumford a national object.

As to the requisite attention and care, it is essential that the flues of the boilers and roasters should not be too small; nor so constructed but that every part of them may be cleaned thoroughly out once a month. The expence of this, which from caution has been hitherto done at the Foundling by the bricklayer himself, has been 2s. a time for the three sets of flues; which would amount to 24s. a year.—Care should also be taken; in using the pipes of the roaster for forcing the hot air, not to open them *both* too hastily, as the effect *may* be so strong as to set fire to the meat.—It is in this, and it is presumed in all kitchens, better for the food, and a saving both in food and fuel, and also less prejudicial to the flues, that the fire should not be made too fierce, but that the cookery should take rather more than less time; and therefore, though water, without forcing the fire, will boil in the great boiler in a hour and a half, yet it has been found better to moderate the fire so as to allow two hours and a half.—When the boiler is just opened, the heat of the confined steam is so great, as to scald more violently than even hot water, if carelessly approached: the covers therefore of the Foundling boilers are all opened by balanced pullies. To these only one caution need be added, necessary in all kitchens, but most in those families where the cook wears *muslin*, that she should be careful, in opening the doors of the grates to serve the fire, that the draught which is very strong, does not draw in and set fire to her cloaths.

N. B. At the porters lodge of the Foundling, the fire place had been very subject to smoke, on account of the unfavourable situation, and want of height of the chimney flue; this has been altered, on Count Rumford's principle, at the expence of a few shillings, and the defect is thereby in a great measure, if not entirely remedied; and at the same time neither the grate or room will now allow the consumption of above half the fuel that was before necessary.

In a cook's shop, on the Foundling Estate, (in the Colonnade north of upper Guilford-street) there has also been fitted up, in a room only 15 by 11 feet, a kitchen on Count Rumford's plan, which is capable of dressing food for 300 persons: This kitchen, the whole expence of fitting up which has hardly exceeded 50*l.* is intended for providing good and wholesome food for the poor, at a very moderate price in money, or upon tickets given them by their opulent and charitable neighbours, who purchase the tickets at Hillyer's shop, in the Colonnade, and by directing their charity into that channel, prevent, in a considerable degree, the abuse of it.

Foundling, 19th Oct, 1796.

